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COMMITTEE ON THE PEACEFUL
USES OF OUTER SPACE

DRAFT REPORT OF THE SCIENTIFIC AND TECHNICAL SUBCOMMITTEE ON THE WORK OF ITS TWENTY-EIGHTH SESSION

INTRODUCTION

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its twenty-eighth session at United Nations Headquarters from 19 February to 1 March 1991 under the chairmanship of Professor J. H. Carver (Australia).

2. Representatives of the following Member States attended the session: Argentina, Australia, Austria, Belgium, Benin, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chile, China, Colombia, Czechoslovakia, Ecuador, Egypt, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Lebanon, Mexico, Mongolia, Netherlands, Nigeria, Pakistan, Philippines, Portugal, Romania, Sweden, Syrian Arab Republic, Turkey, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela, Viet Nam and Yugoslavia.

3. Representatives of the Department of Technical Cooperation for Development and the Office of Legal Affairs of the United Nations Secretariat and the Economic and Social Commission for Asia and the Pacific (ESCAP) also attended the session.

4. Representatives of the following specialized agencies attended the session: Food and Agriculture Organization of the United Nations (FAO), International Civil Aviation Organization (ICAO), World Meteorological Organization (WMO), International Atomic Energy Agency (IAEA) and United Nations Educational, Scientific and Cultural Organization (UNESCO).

5. Representatives of the European Space Agency (ESA), the International Maritime Satellite Organization (INMARSAT), the International Organization for Space Communications (INTERSPUTNIK), the International Telecommunications Satellite Organization (INTELSAT), the Council on International Cooperation in the Study and Utilization of Outer Space (INTERCOSMOS), the Committee on Space Research (COSPAR)

of the International Council of Scientific Unions (ICSU), the International Astronautical Federation (IAF) and the International Society for Photogrammetry and Remote Sensing (ISPRS) also attended the session.

6. A list of the representatives of Member States, specialized agencies and other international organizations attending the session is contained in document A/AC.105/C.1/INF/20.

7. At the opening of the session, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.

2. Statement by the Chairman.

3. General exchange of views.

4. United Nations Programme on Space Applications and the co-ordination of space activities within the United Nations system.

5. Implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

6. Matters relating to remote sensing of the Earth by satellites, including, inter alia, applications for developing countries.

7. Use of nuclear power sources in outer space.

8. Questions relating to space transportation systems and their implications for future activities in space.

9. Examination of the physical nature and technical attributes of the geostationary orbit; examination of its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to space communications developments, taking particular account of the needs and interests of developing countries.

10. Matters relating to life sciences, including space medicine.

11. Progress in national and international space activities related to the Earth environment, in particular progress in the geosphere-biosphere (global change) programme.

12. Matters relating to planetary exploration.

13. Matters relating to astronomy.

14. The theme fixed for special attention at the 1991 session of the Scientific and Technical Subcommittee: "Applications of airborne and satellite remote sensing for prospecting mineral and groundwater resources and for monitoring and managing biological resources, with

emphasis on agriculture, taking into particular account the needs of developing countries".

15. Other matters.

16. Report to the Committee on the Peaceful Uses of Outer Space.

Meetings and documentation

8. The Subcommittee held ... meetings.

9. A list of the documents which were before the Subcommittee is provided in annex I to the present report.

10. At the opening meeting, the Chairman made a statement outlining the work of the Subcommittee at its current session. He also reviewed the activities of Member States in the field of space exploration, including important advances that had been achieved as a result of international cooperation during the past year.

11. At the 386th, 388th and 391st meetings, the Chairman informed the Subcommittee that requests had been received from the permanent representatives of Greece, Spain, Cuba, the Libyan Arab Jamahiriya and Malaysia, as well as from the Permanent Observer for the Holy See, to attend the session. Following past practice, those delegations were invited to attend the current session of the Subcommittee and to address it as appropriate. This was without prejudice to further requests of that nature and did not involve any decision of the Subcommittee concerning status, but was a courtesy that the Subcommittee extended to those delegations.

12. General statements were made by the following delegations: Argentina, Australia, Austria, Bulgaria, Germany, India, Indonesia, Pakistan, Turkey, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics and United States of America. Statements were also made by the representatives of FAO, ESA, INMARSAT, INTERSPUTNIK, INTELSAT, COSPAR and IAF.

13. At the 386th meeting, the Chief of the Outer Space Affairs Division made a statement reviewing the work programme of the Outer Space Affairs Division. At the 388th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

Technical presentations

14. In accordance with paragraph 7 (b) (vii) of General Assembly resolution 45/72 of 11 December 1990, a symposium on the theme "Applications of airborne and satellite remote sensing for prospecting mineral and groundwater resources and for monitoring and managing biological resources, with emphasis on agriculture, taking into particular account the needs of developing countries", sponsored by IAF and COSPAR, was held in two sessions. The first session of the symposium was chaired by Mr. George Ohring, Chairman of the COSPAR Commission on Space Studies of the

Earth's Surface, Meteorology and Climate. It included presentations by Mr. James V. Taranik of the University of Nevada Desert Research Institute, United States, on "Applications of Remote Sensing for General Geology, Oil and Mineral Resources"; by Mr. Massimo Menenti of the Winand Staring Centre, the Netherlands, on "Applications of Remote Sensing for Water Resources"; by Mr. Lawrence C. Rowan of the United States Geological Survey, on "Applications of Remote Sensing for Mineral Resources"; and by Mr. Nicolay V. Mezhelovsky of the USSR Ministry of Geology, on "Remote Sensing: New Capabilities for the Study of Natural Resources". The second session was chaired by Mr. Dale Fester, Vice-President of IAF. It included presentations by Dr. Réjean Simard of the Canada Center for Remote Sensing, on "The Global Change Encyclopaedia: A Project for International Space Year"; by Mr. Roberto Pereira da Cunha of the Brazil Institute for Space Research, on "Applications of Remote Sensing for Deforestation"; by Mr. M. G. Chandrasekhar of the Indian Space Research Organization, on "Applications of Remote Sensing for the Management of Land Resources"; and Mr. Edwin I. Cissel of the United States Department of Agriculture, on "Applications of Remote Sensing for Agricultural Resources".

15. In accordance with paragraph 7 (b) (iv) of General Assembly resolution 45/72, COSPAR arranged a special presentation on "The International Geosphere-Biosphere Programme: The Challenge for Remote Sensing". The presentation was made by Mr. John Townshend of the Department of Geography of the University of Maryland, United States.

16. During the session of the Subcommittee, in addition to the COSPAR/IAF symposium, special scientific and technical presentations were made by Mr. Todd Hawley of the International Space University (ISU) on "Progress towards the permanent ISU campus in 1992"; by Mr. James Harford of IAF, on the 1992 COSPAR/IAF World Space Congress; by Dr. Wesley T. Huntress of the United States National Aeronautics and Space Administration (NASA), on "Voyage to the Planets"; by Astronaut Vance Brand of NASA, on the Space Shuttle programme; by Dr. Dan Tarpley of the United States National Oceanic and Atmospheric Administration (NOAA), on remote sensing; by Dr. Arnauld Nicogossian of NASA and Academician Oleg Gazenko of the USSR Institute of Medical and Biological Problems, on life sciences and space medicine; by Dr. Gunther Riegler of NASA, on "Access to Data from Space Astrophysics Missions"; by Mr. Sinichi Nakayama of the Japan Science and Technology Agency, on "Space Development Activities of Japan"; and by Ms. Diane Thompson of the Canadian Remote Sensing Society, on "Airborne Remote Sensing for Global Resource Monitoring".

Recommendations of the Scientific and Technical Subcommittee

17. After considering the various items before it, the Subcommittee, at its ...th meeting, on 1 March 1991, adopted its report to the Committee on the Peaceful Uses of Outer Space containing its views and recommendations as set out in the paragraphs below.

I. UNITED NATIONS PROGRAMME ON SPACE APPLICATIONS AND THE CO-ORDINATION OF SPACE ACTIVITIES WITHIN THE UNITED NATIONS SYSTEM

II. IMPLEMENTATION OF THE RECOMMENDATIONS OF THE SECOND UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

18. In accordance with General Assembly resolution 45/72, the Subcommittee continued its consideration of these items. In accordance with past practice, the Subcommittee considered the two items jointly.

19. The Subcommittee noted that the General Assembly, in paragraph 13 of resolution 45/72, had once again emphasized the urgency and importance of implementing fully the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) as early as possible. The Subcommittee also took note of paragraph 8 of the same resolution, in which the General Assembly had stated that, in the context of the Subcommittee's consideration of the item, it was particularly urgent to implement the following recommendations:

"(a) All countries should have the opportunity to use the techniques resulting from medical studies in space;

"(b) Data banks at the national and regional levels should be strengthened and expanded and an international space information service should be established to function as a centre of coordination;

"(c) The United Nations should support the creation of adequate training centres at the regional level, linked, whenever possible, to institutions implementing space programmes; necessary funding for the development of such centres should be made available through financial institutions;

"(d) The United Nations should organize a fellowship programme through which selected graduates or postgraduates from developing countries should get in-depth, long-term exposure to space technology or applications; it is also desirable to encourage the availability of opportunities for such exposure on other bilateral and multilateral bases outside the United Nations system."

20. In response to the recommendations of the Working Group of the Whole to Evaluate the Implementation of the Recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space contained in its report on the work of its fourth session held in 1990 (A/AC.105/456, annex II, paras. 4, 5 and 6), endorsed by the General Assembly in paragraph 10 of resolution 45/72, the Subcommittee had before it the following documents: a report on international cooperation in the peaceful uses of outer space: activities of Member States (A/AC.105/470), containing information submitted by Member States in response to paragraphs 4 (c), 4 (j) and 6 (b) of the report of the Working Group; a list of experts in space technology and applications (A/AC.105/460 and Add.1), in response to paragraph 4 (e); a report on cooperative arrangements in support of the

implementation of the United Nations Programme on Space Applications (A/AC.105/473), in response to paragraph 4 (f); a report on economic aspects of strengthening and expanding national and regional data banks and establishing an international space information service as a coordinating centre (A/AC.105/474), in response to paragraph 4 (m); a study on applications of space technology to flood monitoring and control (A/AC.105/472), in response to paragraph 5 (b) (iv); a report on upper atmosphere studies for weather and environment monitoring (A/AC.105/477), in response to paragraph 5 (b) (vii); a report on the implementation of the recommendations of UNISPACE 82: actions by international organizations (A/AC.105/475), in response to paragraph 6 (a). In addition, the Subcommittee had before it annual reports, including information in response to paragraph 4 (d), submitted by the following international organizations: the International Telecommunication Union (ITU) (A/AC.105/462), INMARSAT (A/AC.105/466), the European Telecommunications Satellite Organization (EUTELSAT) (A/AC.105/467), INTELSAT (A/AC.105/480) and INTERCOSMOS (A/AC.105/481).

21. In accordance with paragraph 9 of General Assembly resolution 45/72, the Subcommittee reconvened the Working Group of the Whole with a view to improving the execution of activities relating to international cooperation, particularly those included in the United Nations Programme on Space Applications, and to proposing concrete steps to increase such cooperation as well as to make it more efficient. The Working Group was chaired by Mr. Muhammad Nasim Shah (Pakistan); it held ... meetings between 21 and ... February 1991 and adopted its report (A/AC.105/C.1/...) on ... February 1991.

22. Having considered the report of the Working Group of the Whole, the Subcommittee decided at its ...th meeting, on ... February 1991, to adopt that report, as contained in annex II to the present report, on the understanding that the recommendations contained therein would be carried out in accordance with paragraph 9 of General Assembly resolution 37/90 of 10 December 1982. The Subcommittee recommended that the Working Group of the Whole be reconvened the next year to continue its work.

A. United Nations Programme on Space Applications

23. Regarding the expanded United Nations Programme on Space Applications, the Subcommittee had before it the report of the United Nations Expert on Space Applications (A/AC.105/478). The report was supplemented by the statement by the Expert. The Subcommittee noted that the Programme on Space Applications for 1990 had been carried out satisfactorily and commended the work accomplished by the Expert in carrying out the work programme as endorsed by the Subcommittee at its last session.

24. The Subcommittee noted with appreciation that since its last session additional contributions had been offered by various Member States and organizations and that they had been acknowledged with appreciation in paragraph 52 of the Expert's report, as well as under appropriate sections of the present report.

25. In this connection, the Subcommittee continued to express its concern over the limited financial resources available for carrying out the Programme and appealed to Member States to support the Programme through voluntary contributions. The Subcommittee felt that the limited resources of the United Nations should be focused on the highest priority activities and noted that the Programme on Space Applications was the priority activity of the Outer Space Affairs Division.

1. 1990-1991

(a) Long-range fellowships for in-depth training

26. The Subcommittee expressed its appreciation to the Governments of Austria, Brazil, China and the USSR as well as to ESA for having offered the training fellowships for the period 1990-1991 that were currently being conducted, as shown in the annex to the Expert's report (A/AC.105/478). The Subcommittee noted with appreciation that the offers of fellowships were to be continued for 1991-1992 by the same Governments and organization, as indicated by the Expert in his statement.

27. The Subcommittee noted that it was important to increase the opportunities for in-depth education in all areas of space science, technology and applications through long-term fellowships.

(b) Technical advisory services

28. The Subcommittee took note of the technical advisory services provided by the Outer Space Affairs Division in support of regional space applications projects, as indicated in the report of the Expert (A/AC.105/478):

(a) Assistance to the Government of Costa Rica in the organization of the Space Conference of the Americas: Prospects of Cooperation for Development, held at San José from 12 to 16 March 1990;

(b) Participation, in cooperation with the European Space Agency, in a survey for the selection of sites for the acquisition of satellite data for remote sensing applications in African countries within range of ESA ground stations, as a follow-up to the United Nations/United Nations Development Programme (UNDP)/FAO/ESA Meeting of Experts on Remote Sensing and Satellite Meteorology Applications to Marine Resources and Coastal Management (see A/AC.105/436);

(c) Assistance to the Economic Commission for Africa (ECA) and the Governing Council of the Regional Centre for Services in Surveying, Mapping and Remote Sensing through participation in a fact-finding mission to the Regional Centre at Nairobi.

29. The Subcommittee also noted that the Division would assist the Centro de Levantamientos Integrados de Recursos Naturales por Sensores Remotos (CLIRSEN) of Ecuador in a survey of Member States within range of the Cotopaxi Remote Sensing Ground Receiving Station in order to provide those States with information on the services to be provided by the station.

(c) United Nations workshops/training courses/seminars/meetings of experts

30. With regard to the activities of the Programme carried out in 1990, the Subcommittee expressed its appreciation to:

(a) The Government of Sweden for co-sponsoring the United Nations International Training Course on Remote Sensing Education for Educators, hosted by the University of Stockholm and the Swedish Space Corporation and held at Stockholm and Kiruna from 14 May to 15 June 1990 (A/AC.105/463);

(b) The Government of Cuba for co-sponsoring the United Nations Workshop on Space Communications for Development, hosted by the Ministry of Communications of Cuba and held at Havana from 26 to 30 March 1990 (A/AC.105/469);

(c) The Government of Brazil, as well as FAO and ESA, for co-sponsoring the United Nations/FAO/ESA Workshop on Microwave Remote Sensing Technology, hosted by the Instituto Nacional de Pesquisas Espaciais (INPE) at São José dos Campos from 19 to 23 November 1990 (A/AC.105/471).

31. The Subcommittee also noted that the United Nations, through the Programme on Space Applications, had co-sponsored and financially supported the United Nations/FAO International Training Course on Agricultural Applications of Remote Sensing, hosted by the Agricultural University of Prague from 18 to 29 June 1990, and the United Nations/FAO/ESA International Workshop on Remote Sensing: Geo-information Technology for Decision-Makers, co-sponsored by the Government of France and hosted by FAO at Rome from 7 to 16 November 1990.

32. The Subcommittee took note of the status of the 1991 programme of United Nations workshops/training courses/seminars/meetings of experts, which included the following activities, as described in paragraph 33 of the Expert's report (A/AC.105/478):

(a) The United Nations/ESA Workshop on Basic Space Research, to be organized in cooperation with the Government of India for the benefit of countries in the regions of the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic and Social Commission for Western Asia (ESCWA) and to be held at the Indian Space Research Organization in Bangalore, India, from 30 April to 4 May 1991;

(b) The third United Nations/FAO/ESA Workshop on Microwave Remote Sensing Technology, to be organized in cooperation with the Government of Spain for the benefit of countries in the regions of ECA and ESCWA and held at the Instituto Nacional de Técnica Aeroespacial (INTA) ground station in Maspalomas, Canary Islands, Spain, from 10 to 14 June 1991;

(c) The fifteenth United Nations/FAO International Training Course on Remote Sensing Applications to Renewable Resources, to be organized in co-operation with the Government of Italy and held at FAO headquarters, Rome in September 1991;

(d) The International Training Course on Remote Sensing Applications for Environmental Assessment and Monitoring, to be organized in cooperation with the Government of the United States and held at the Earth Resources Observation System (EROS) Data Center in Sioux Falls, South Dakota, from 9 September to 4 October 1991;

(e) The United Nations/FAO/ECA Regional Seminar on Remote Sensing for Decision-Makers, to be organized in cooperation with the Government of Kenya and held at the Regional Centre for Services in Surveying, Mapping and Remote Sensing in Nairobi, from 17 to 21 June 1991;

(f) The United Nations Regional Workshop on the Application of Space techniques to Combat Natural Disasters, to be co-sponsored by the Office of the United Nations Disaster Relief Coordinator (UNDRO), WMO and UNESCO, in cooperation with the Government of China and ESCAP, for the benefit of countries in the ESCAP region, and hosted by the State Science and Technology Commission of China at Beijing from 16 to 20 September 1991;

(g) The sixth United Nations/FAO/WMO/ESA Training Course on the Applications of Remote Sensing in Agrometeorological and Hydrological Studies, to be organized in cooperation with the Government of Peru for the benefit of countries in the region of the Economic Commission for Latin America and the Caribbean (ECLAC) from 7 to 25 October 1991.

(d) Promotion of greater co-operation in space science and technology

33. The Subcommittee noted that during the thirty-third Plenary Meeting of COSPAR, held at The Hague in June-July 1990, the United Nations, through the Programme on Space Applications, had co-sponsored a special panel on the "Equatorial Electrojet and Related Phenomena" and provided financial support for a participant from a developing country, and that during the forty-first IAF Congress held at Dresden, Germany, in October 1990, the United Nations had co-sponsored a special session on "Space and Forest Management" and supported the participation of three speakers from developing countries.

34. The Subcommittee also noted that the United Nations, through the Programme on Space Applications, would co-sponsor the following activities: a Workshop on Space Technologies for Development, to be held at Montreal, Canada, from 2 to 5 October 1991, in conjunction with the forty-second IAF Congress; a special workshop at the 17th Congress of the International Society for Photogrammetry and Remote Sensing, to be held in Washington in August 1992; and a special workshop for developing countries, to be organized during the COSPAR/IAF World Space Congress to be held in Washington in August-September 1992.

2. 1992

United Nations workshops/training courses/seminars/meetings of experts

35. The Subcommittee recommended the approval of the programme of workshops/training courses/seminars/meetings of experts proposed for 1992, as outlined by the Expert in paragraph 34 of his report (A/AC.105/478), including the following:

(a) A United Nations/United States International Conference on Satellite Remote Sensing for Resource Management, Environmental Assessment and Global Change Studies: Needs and Applications for the Developing World, to be held in Washington;

(b) The seventh United Nations/FAO/WMO/ESA Training Course on the Applications of Remote Sensing in Agrometeorological and Hydrological Studies, to be held at Nairobi;

(c) The second United Nations/Sweden Training Course on Remote Sensing Education for Educators, to be held at Stockholm and Kiruna, Sweden;

(d) An International Seminar on Satellite Communications, to be organized in cooperation with the Government of the USSR and held in Moscow;

(e) A United Nations/FAO/International Centre for Theoretical Physics (ICTP) training Course on Remote Sensing Applications, to be held in Rome;

(f) A United Nations Regional Communications Workshop, to be organized in cooperation with the Government of China, for the benefit of States in the ESCAP region;

(g) A United Nations/UNESCO/WMO/ICTP Conference on Bridging the Information Gap in Space Science and Technology, to be held at United Nations Headquarters.

B. International space information service

36. The Subcommittee noted with satisfaction that the Outer Space Affairs Division was in the process of developing an international space information system, including both information within the United Nations system and access to external databases. The Subcommittee took note of the report on the economic aspects of strengthening and expanding national and regional data banks and establishing an international space information service (A/AC.105/474), prepared by the Secretariat as requested by the Working Group of the Whole.

37. The Subcommittee noted with satisfaction the publication of the document entitled "Seminars of the United Nations Programme on Space Applications: Selected Papers on Remote Sensing Technology and Satellite Communications (A/AC.105/468) and the list of experts in space technology and applications (A/AC.105/460 and Add.1), as recommended by the Working Group of the Whole. It also noted that for 1992 the Secretariat would prepare updated editions of the Directory on Education, Training,

Research and Fellowship Opportunities in Space Science and Technology and its Applications (A/AC.105/432) and the Directory of Information Systems on Space Science and Technology (A/AC.105/397/Rev.1 and Add.1).

C. Reports

38. The Subcommittee noted with appreciation the reports submitted to it in response to the recommendations of the Working Group of the Whole in its report on its fourth session (A/AC.105/456, annex II, paras. 4, 5 and 6). It noted in particular the technical studies prepared by the Secretariat on flood monitoring and control (A/AC.105/472) and on upper atmosphere studies for weather and environment monitoring (A/AC.105/477).

D. Co-ordination of space activities within the United Nations system and inter-agency co-operation

39. The Subcommittee noted that the General Assembly, at its forty-fifth session, had reaffirmed its request that all organs, organizations and bodies of the United Nations system and other intergovernmental organizations working in the field of outer space or on space-related matters should cooperate in the implementation of the recommendations of UNISPACE 82.

40. The Subcommittee noted with satisfaction that the twelfth Inter-Agency Meeting on Outer Space Activities had been convened by the Administrative Committee on Coordination (ACC) in Rome and hosted by FAO from 26 to 28 September 1990 and that its report (ACC/1989/PG/9) was before the Subcommittee. The Subcommittee took note of the information provided on the progress achieved in the coordination of space activities among organizations within the United Nations system and expressed its appreciation for the report of the Secretary-General entitled "Coordination of outer space activities within the United Nations system: programmes of work for 1991 and 1992 and future years" (A/AC.105/465).

41. The Subcommittee continued to stress the necessity of ensuring continuous and effective consultations and coordination in the field of outer space activities among organizations within the United Nations system and the avoidance of duplication of activities.

E. Regional and interregional mechanisms of co-operation

42. The Subcommittee noted that the General Assembly, in its resolution 45/72, had reaffirmed its approval of the recommendation of UNISPACE 82 regarding the establishment and strengthening of regional mechanisms of co-operation and their promotion and creation through the United Nations system. The Subcommittee noted with satisfaction that, in carrying out various activities in the implementation of recommendations of UNISPACE 82, the Secretariat had sought to strengthen those mechanisms.

43. The Subcommittee took note of the efforts undertaken as part of the United Nations Programme on Space Applications, in accordance with the UNISPACE 82 recommendation concerning the development of indigenous capabilities, to establish regional centres for space science and technology education in existing national or regional educational institutions in developing countries, as recommended by the Committee on the Peaceful Uses of Outer Space and endorsed by the General Assembly in resolution 45/72, and as outlined in paragraphs 35 to 44 of the report of the Expert (A/AC.105/478). The Subcommittee urged Member States to support the development of such regional centres. The Subcommittee requested the Outer Space Affairs Division to keep it informed of further developments on the subject.

44. The Subcommittee took note of the contributions made by other international organizations towards the promotion of international cooperation in outer space: FAO was continuing its activities relating to remote sensing of renewable natural resources, including training courses, support of development projects and monitoring environmental conditions for the FAO Early Warning System on Food and Agriculture; ITU was continuing its work in the international coordination of space communications, including planning the 1992 World Administrative Radio Conference, providing technical assistance to developing countries and assisting in the development of a regional communication satellite system for Africa (RASCOM); INMARSAT was continuing to develop its satellite communication system for maritime, land-mobile and aeronautical communications, including developing small, low-cost terminals and providing technical assistance and training; INTELSAT was further developing its system for international satellite communications, including its programme for training and education in the use of communication satellites; ESA was continuing its programme of international cooperative space activities, including training programmes for the benefit of developing countries, support of the activities of the United Nations Programme on Space Applications and technical assistance projects; and INTERSPUTNIK was continuing to develop its communication satellite system and its programme of assistance to developing countries through dissemination of information and assistance in Earth station development.

45. The Subcommittee emphasized the importance of regional and international cooperation in making the benefits of space technology available to all countries, through such cooperative activities as shared payloads, dissemination of information on spin-off benefits, ensuring compatibility of space systems and providing access to launch capabilities at reasonable cost.